

REMARKS

Claims 1-7, 10 and 11 are pending

Response to Claim Rejections Under § 102/103

Claims 1-7 and 10-11 have been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly being obvious over U.S. Patent No. 6,197,870 to Sakakibara. Applicants respectfully traverse.

In the Office Action, the Examiner asserts that the values given in Table 5 show that the carbon black of Sakakibara provides both a low heat buildup and good wear resistance, and thus the hydrogen desorption ratios of Examples 4-7 disclosed in Sakakibara must meet the limitation recited in present Claim 1.

Applicants disagree.

In support, Applicants submit herewith an additional Declaration under 37 C.F.R. §1.132 by Mr. Yanagioka.

In Table 5 of Sakakibara, only Examples 1-3 exhibit good balance of low heat buildup and high wear resistance. However, as shown in the below table, Examples 1-3 of Sakakibara do not meet the present requirement concerning CTAB surface area, and thus they do not comply with all the requirements concerning CTAB surface area, hydrogen desorption ratio and toluene tinting permeability, as recited in present Claim 1.

	Requirement concerning CTAB surface area in the present claim 1	Example 1	Example 2	Example 3
CTAB surface area (m ² /g)	111-200	75	88	105
Abrasion resistance (LA60)		128	136	133
Loss factor		75	84	98

Moreover, though Examples 4-8 in Table 5 of Sakakibara do meet the requirement concerning CTAB surface area, as recited in present Claim 1, the loss factor, which is an index of low heat buildup, is large. Thus, the results demonstrate that the carbon blacks of Examples 4-8 of Sakakibara differ from the presently claimed carbon black.

In addition, a long heating time is typically required to produce carbon black having a large CTAB surface area as defined in the present invention. However, the long heating time inevitably makes the hydrogen desorption ratio of the resulting carbon black small.

In this regard, the inventors of the present invention focused their attention on a cooling step, and thereby produced carbon black having a large CTAB surface area, while maintaining the desired hydrogen desorption ratio. Thus, by compounding the presently claimed carbon black into a rubber composition, excellent balance of low heat buildup and good wear resistance of the rubber composition can be accomplished.

In contrast, the carbon blacks of Examples 1-3 in Table 5 of Sakakibara have a small CTAB surface area, so a long heating time was not required to produce such carbon black, and thus the hydrogen desorption ratio of Sakakibara's carbon black would be maintained.

In this regard, Mr. Yanagioka's Rule 132 Declaration shows a relationship between the hydrogen desorption ratio and CTAB surface area of the carbon black and the wear resistance and low heat buildup of the rubber composition. More particularly, as shown, when the CTAB surface area is $111\text{--}200\text{ m}^2/\text{g}$, and the hydrogen desorption ratio is larger than $0.260\text{--}6.25 \times 10^{-4} \times \text{CTAB (wt\%)}$, the high wear resistance and low heat buildup of the rubber composition can be simultaneously established. Further, even when the hydrogen desorption ratio is larger than $0.260 - 6.25 \times 10^{-4} \times \text{CTAB (wt\%)}$, if the CTAB surface area is less than $111\text{ m}^2/\text{g}$, the wear resistance of the rubber composition deteriorates.

One skilled in the art would not expect the results obtained according to the present invention, given the disclosure of the cited art.

Thus, Sakakibara fails to anticipate or render obvious the present claims. Accordingly, withdrawal of the rejection is respectfully requested.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

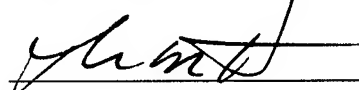
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